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A National Newspaper for Every Branch of the Industry

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DETROIT

Automotive Daily News

CARS · SHOP EQUIPMENT · TRUCKS · AVIATION · PARTS · ACCESSORIES · TIRES

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Stewart Starts Production On New 8-in-Line 3-Ton Truck Chassis at $2,990

First Complete Description Shows L-Head Type, With Bore and Stroke of 3¾x4¾, Developing 130 H. P.

BUFFALO, N. Y., Sept. 22.—The Stewart Motor Corporation of this city today announced that production was under way on its new eight-in-line, three ton truck chassis, priced at $2,990. The Automotive Daily News some weeks ago told its readers that this new chassis was impending, but until now no complete description has been available.

The eight-in-line engine is of the L-head type, with a bore and stroke of 3¾x4¾ and develops 130 horsepower. Piston displacement is 420 cubic inches. The engine is designed to develop its greatest torque at low speeds, so as to yield exceptional high-gear performance. The power plant is a three-point suspension design, mounted on rubber blocks. A balancer is fitted on the front end of the crankshaft. Full force feed lubrication is used and a Swan type manifold is fitted to give control of the heat. Cylinder block and crankcase are integral, with removable head.

The radiator is a polished shell type, the core being a vertical tube design. A pump drives the water through a cooling system that has a large margin over normal needs, and the fan has a diameter of twenty inches. A thermostat is used to control temperature.

Battery ignition is used, with a semi-automatic engine distributor placed on the top of the cylinder head. Starter and electrical equipment are Delco-Remy. The carburetor is a Stromberg of the single type, equipped with an air cleaner.

A multiple disc, dry-plate clutch is employed, of the gear-tooth type, automatically adjustable for wear. A special reduction is designed to give light pedal pressure. The clutch throwout bearing is lubricated by alemite.

(Continued on Page 2)

DODGE BROS. RETAIL DELIVERIES CONTINUE SEPTEMBER UPTREND

Detroit, Sept. 22.—Overall retail deliveries of passenger cars and trucks by Dodge Brothers dealers in the United States for the week ending September 5 exceeded the same period a year ago by 90.2 per cent., according to a factory statement just received from A. van Der Zee, general sales manager.

Such increases have been reported regularly by Dodge Brothers for nine consecutive weeks. To date, in 1931, Mr. van Der Zee's statement disclosed, Dodge overall deliveries are running 99.1 per cent. of figures for the same period in 1930.

That this overall increase is not attributable entirely to the tremendous sales increases that have been recorded by Dodge dealers in merchandising the New Plymouth is evidenced by the fact that retail deliveries of Dodge Sixes and Eights for the week ended September 5 exceeded the same week in 1930 by 26.7 pr cent., the eighth consecutive week that such advances have been recorded.

Retail truck deliveries have also

(Continued on Page 6)

Automotive Engineers Have Day At 13th National Metal Congress

Interesting Technical Programs Featured by All Societies; Annual Banquet Scheduled for Tonight

BOSTON, Mass., Sept. 22.—The Society of Automotive Engineers has laid out an extremely interesting program for its technical session tomorrow, in connection with the Metals Congress in this city. The technical session gets under way in the Georgian Room of the Hotel Statler at 9.30 a. m. The chairman is F. P. Gilligan of the Henry Souther Engineering Corporation.

There are three speakers who will read significant papers. E. F. Davis of the Warner Gear Company is down to speak on "Heat-Treating Methods and Costs." Dr. Haakon Styri of SKF will read a paper on "Recent Developments in Heat-Treating Ball Bearing Races." F. W. Shipley of the Caterpillar Tractor Company will speak on "Characteristics of Alloyed Cast Iron."

In the meantime technical sessions of the A. S. S. T. will proceed also at the Statler. The morning session is given over to the Campbell memorial lecture, delivered by C. H. Herty, Jr., Dr. Zay Jeffries presiding. The afternoon session is under the joint chairmanship of G. B. Waterhouse and G. V. Luerssen. This session will be devoted to discussions of melting processes and developments.

At the Copley Plaza the American Welding Society will hold technical sessions both morning and afternoon, with H. P. Peabody of Boston in the chair.

The American Institute of Mining and Metallurgical Engineers in the morning will make a trip to the Bethlehem Shipbuilding Corporation's plant at Quincy, Mass. In the afternoon there is to be a joint session with discussions of age hard-

(Continued on Page 4)

CANADIAN EXPORTS OF CARS AND TRUCKS 38% LESS THAN 1930

Washington, Sept. 22.—Canadian automotive exports continue to show a very sizeable decline according to figures issued by the automotive division of the Department of Commerce.

Exports of passenger cars and trucks for July totaled $386,118, a decrease of 8.9 per cent., as compared with shipments for June, 1931, which were valued at $424,062. Exports in July, 1930, reached a value of $1,480,928. Automobile parts valued at $72,495 were exported in July, as compared with $97,930 in June, and $121,980 in July, 1930.

Canadian production of motor vehicles in July declined 38 per cent. as compared to June. The average value of passenger cars and trucks exported was $421 and $395 respectively in July and $425 and $382 in June.

British South Africa continues to be the leading customer for both Canadian passenger cars and trucks, its takings of trucks showing an increase of 26 per cent. over June, 1931, and an increase of 63.9 per cent. over July, 1930, while its purchases of passenger cars declined 19 per cent., as compared with June, 1931. Its takings included 184 passenger cars in the $500 or less classification and 11 units valued at from $500 to $1,000.

British India advanced to second

(Continued on Page 6)

CHRYSLER SHOWING WEEK TO WEEK GAIN OVER LAST YEAR

Detroit, Sept. 22.—Retail deliveries by Chrysler dealers have shown a continued week to week increase since the week ending July 12, over corresponding periods in 1930, according to a statement issued today by J. W. Frazer, general sales manager.

Looking at the percentage of increase each week since that date, Mr. Frazer's statement points out that the week of July 12th showed an increase of 47 per cent over the corresponding week last year, and the following week to week increases, as compared to corresponding weeks in 1930, are: Week ending July 19, 85 per cent.; July 26, 40 per cent.; August 2, 54 per cent.; August 9, 56 per cent.; August 16, 57 per cent.; August 23, 70 per cent.; August 30, 58 per cent.

TRUCK SALES IN AUGUST IN 29 STATES TOTAL 14,399

DETROIT, Sept. 22.—Complete figures on August retail sales of new motor trucks will show less decline from July figures than the sales of new passenger cars, according to R. L. Polk & Co.

Truck figures in hand from twenty-nine states show 14,399 new trucks sold in August, against 16,602 in July, a decline of 13.27 per cent. August sales are 17.26 per cent. under August last year, when the same states reported a total of 17,402 units sold.

Polk's figures to date on passenger car sales from thirty-one states, normally representing about 65 per cent. of the entire country, show 102,379 units sold in August. This is 19.9 per cent. under sales for these states in July and 23 per cent. under August of last year.

BUICK WILL RESUME ON REGULAR BASIS OCT. 1

Detroit, Sept. 22.—The Buick Motor Company is expected to resume operations on regular basis about October 1 following shutdown for inventory. Company began the first week in September taking inventory, closing down departments on a staggered plan.

STANDARD PLATE GLASS WILL BE REORGANIZED

Pittsburgh, Sept. 22.—Prospects for the reorganization or liquidation of the Standard Plate Glass Company have been brightened materially by the announcement of plans for the resumption of operations at the company's Butler plant.

A lease has been signed with George C. Stewart of Butler, Pa., and associates for a period of eight months. There is an option for the renewal of the lease for an additional six months, with a further option for the purchase of the plant. It is understood that the purchase price would be $750,000.

Cities Service President Decries Wastage of Oils

NEW YORK, Sept. 22.—Henry L. Doherty, president of Cities Service Company, giving his views on the petroleum industry, supplementing his address on September 16 before the National Petroleum Association at Atlantic City, said the oil business could have ridden the general business storm easily, with a remarkably high degree of prosperity, if sane methods of production and distribution had been in force.

"There is no hope for the oil industry under our present system of producing oil," said Mr. Doherty, "for regardless of how much or how little we have in the way of resources it is bound to be uncovered and the bulk of it is bound to be recklessly and unnecessarily wasted."

Commenting on the effect of overproduction in the petroleum industry on coal producers and railroads, Mr. Doherty declared that if petroleum was to be put in further competition with the coal industry, still further crippling it and injuring the coal-carrying railroads, he saw no promise of improvement, "except for illegal and in some cases strong-arm methods enforced by the militia to hold back production."

Referring to the marketing end of the industry, Mr. Doherty said: "We have built service stations until we now have so many that some of them don't take in enough money to pay the out-of-pocket expenses of the station, leaving nothing for gasoline or the huge motor fuel taxes. After crippling the coal business and the coal-carrying roads, the industry proposes to go into any and every line of business to enable it to support non-profitable service stations and subject any other line of business that has any possibility of profit to unfair competition and perhaps ruin, rather than to try to reform the production end of its own business."

Mr. Doherty referred to his own recommendation of some years ago, that each oil pool should be held to be a jointly owned property and should be administered as other joint properties are administered. If this plan of unit operation had been accepted, he said, the industry would have escaped many of its present difficulties.

Late News Flashes

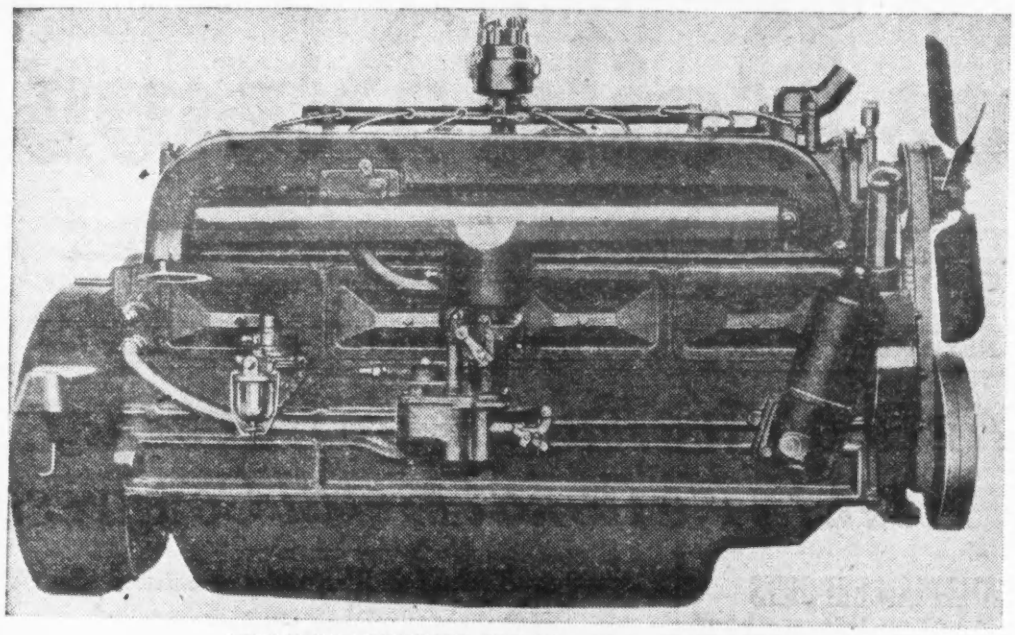
Detroit, Sept. 22.—After an illness extending over the past three months, Clement S. McElwain, member of General Motors advertising staff, died at his home here yesterday. Mr. McElwain was advertising manager of the Oakland Motor Car Company before joining the General Motors staff at headquarters. He came into the industry from the newspaper field, having been identified with dailies at Lansing and Flint.

* * *

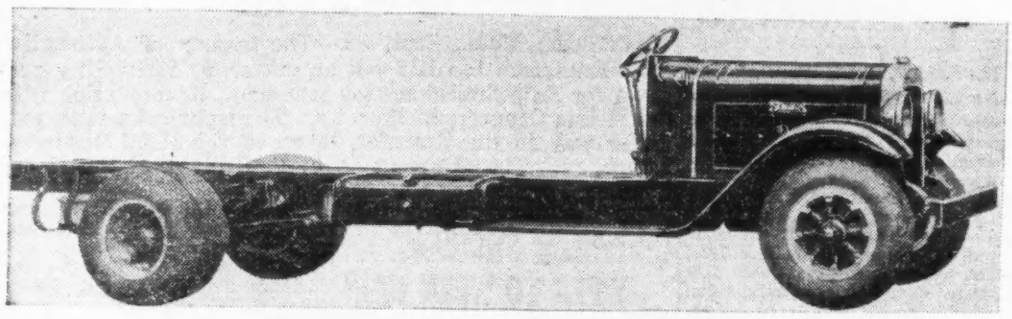
Toledo, O., Sept. 22.—The Gulf Refining Company will spend $1,000,000 on an addition to its oil refinery here. A new still will be built and storage tanks added. Gulf has this year carried out a $6,000,000 program in modernizing the old Paragon refinery.

* * *

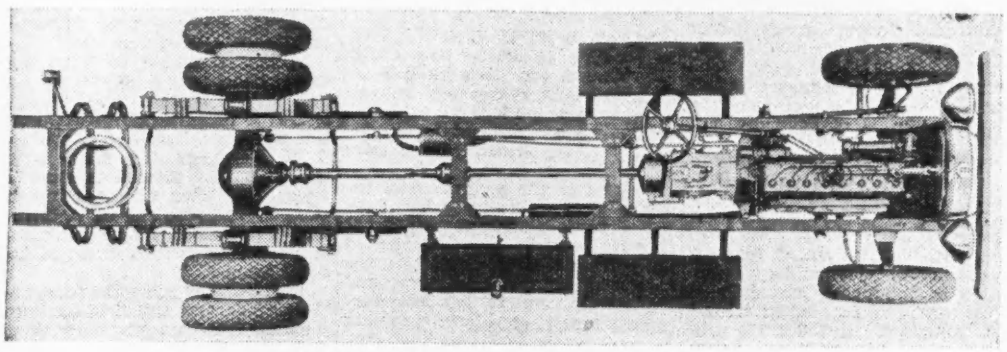
Tulsa, Okla., Sept. 22.—Daily domestic crude oil output in the United States for the week ending September 19 totaled 2,179,594 barrels, an increase of 41,704 barrels over the previous week, according to the Oil and Gas Journal of this city.



NEW EIGHT-CYLINDER ENGINE used in Stewart truck



RIGHT SIDE VIEW of new Stewart three-ton truck



PLAN VIEW of new Stewart three-ton truck

Stewart Starts Production On New 8-in-Line Chassis

(Continued from Page 1)

The transmission has four speeds and reverse, with generous shafts mounted on annular ball bearings. The gear ratios are: Low, 6.92.1; The gear ratios are: Low, 6.92 to 1; second, 3.47 to 1; third, 1.89 to 1; high, 1 to 1; reverse, 8.06 to 1. With the rear axle ratio of 7⅛ to 1, the total reductions to the rear wheels are as follows: Low, 50 to 1; second, 25 to 1; third, 13 to 1; high, 7.12 to 1; reverse, 58 to 1. An auxiliary transmission is furnished at extra cost, which requires a worm or double eduction rear axle.

The rear axle is of the full floating spiral bevel gear type. The housing is of cast steel, the outer ends being reinforced with alloy steel sleeves, which support the wheel bearing. The diameter of the axle shaft is 1⅛ inches, with the ends enlarged where the splines are cut. The standard gear ratio is 7⅛ to 1. The track is 72⅛ inches on a standard cast steel wheel with dual tires. Large radius rods are used. A Timken worm gear or double reduction rear axle, model 38-8, is supplied at extra cost.

The rear springs are 56x3 inches, with bronze bushings, having 1¼-inch spring pins. The main spring has fifteen leaves of fine alloy steel and the auxiliary springs have six leaves. The auxiliary springs are standard equipment.

The steering gear is a Ross cam and lever unit, of the roller type, with a low ratio to insure easy steering. The steering wheel is 20 inches in diameter.

The side rails of the frame are nine inches deep and 9-32 inches thick, the material being high carbon steel.

The service brakes are Bendix duo servo, operating on all four wheels. They are mechanically operated by rods on the rear and cable on the front. The size of the front brakes is 16x2, and that of the rear set 17¼x3. The B-K booster is standard. The hand brake is of the contracting band type mounted on the drive-shaft flange at the rear of the transmission. The hand brake is 11 inches in diameter and 5 inches wide.

Balloon tires 8.25x20, dual in the rear, are standard, but special 9 or 9.75x20 casings may be had at extra cost.

The standard wheel base is 170 inches, but shorter ones of 150 and 160 inches may be had without extra cost. Special wheel bases of 180, 196, 226 and 241 are available at extra cost. This chassis will accommodate bodies with lengths varying from 11 to 18 feet.

The gasoline tank holds thirty-one gallons, and is mounted on the side of the frame. A thirty-gallon tank may be installed under the front seat at extra cost. Fuel feed is by engine-driven pump. A gasoline gauge is standard on the side-mounted tank.

Painting of this chassis is standard. Hood, cowl and chassis are finished in Stewart green, with aprons in black enamel. Wheels are Stewart red. The chassis weight is 6,750 pounds.

Equipment provided is as follows: Electric starter and generator, electric lights, cowl side lights and horn, battery, tool kit, jack, spare tire carrier, spare rim, front bumper, speedometer, windshield wiper and mirror on all cabs and bodies. Air cleaner, thermostat, stop light and Alemite grease gun. The natural wood finish steel instrument board is equipped with ammeter, oil gauge, gasoline gauge, temperature gauge, starting choke button, lighting and ignition switch with indirect lighting and manifold heat control button.

This new Stewart line, with its eight-cylinder-in-line power plant, is designed for all classes of hauling work demanding speed, power and stamina. In summing up the capabilities of this new chassis the manufacturers describe it as a heavy duty job capable of making over fifty miles per hour with a full load.

TWIN COACH CO. GETS ORDERS FOR 75 BUSES

Kent, O., Sept. 22.—Orders for seventy-five light delivery trucks have been received by the Twin Coach Company of Kent. The orders were received as the company is completing an order for 150 buses from the Brooklyn Bus Corporation.

One order for fifty trucks will go to the Helm Baking Company of Los Angeles, while another order for twenty-five will go to the United States Parcel Service, New York, N. Y. Deliveries on the new orders are scheduled for the latter part of September and October.

OPENS NEW SHOWROOM

Somerville, Mass., Sept. 22.—Monarch Motor Sales Company of this city has opened a new showroom at 403 Highland Ave., Davis Square, Somerville, and has removed from its former location at 238 Pearl St.

SPARKS from DETROIT

Frank L. Spring

* * *

More Motor Laws

* * *

Boo Ford's Ban

* * *

A New Racket

* * *

Chris Sinsabaugh—Detroit Editor

SOMETHING like fifteen years ago, in a little Ohio town, Frank L. Spring and Albert Burch, the latter identified with the manufacture of the Clydesdale truck, attempted to set the automobile world afire with the Courier passenger car, not the one built by H. C. Maibohm at Sandusky, but its predecessor. The Courier was a flop, and Spring hiked for the Pacific Coast. Instead of being an automobile manufacturer, he became a body designer, a switch in vocations that has brought him world-wide fame.

* * *

OVERNIGHT, one might say, Spring established a contact in California that set him up in his present profession. In Walter M. Murphy of Los Angeles he found a man who, while specializing in building individual bodies, sadly lacked one thing—a body engineer with original ideas and a knowledge of the automobile business.

He found this combination in Spring. He was lucky in hooking up with him. From the Murphy works came original productions, the children of the Spring brain—the famous California top, which permitted the conversion of an open car into a closed one; the disappearing top coupe, which has made such a hit in the present market, and the convertible body. And Spring smiles modestly when you accuse him of being the father of such a large family.

* * *

MURPHY has been regarded as the largest manufacturer of individual bodies in the world, making from 200 to 250 a year, and getting from $5,000 to $10,000 each for his creations. His customers come from all parts of the world—European royalty, American millionaires, movie stars and others seeking something out of the ordinary.

* * *

NOW California has lost Spring. Hudson-Essex has grabbed him and has him at work in the Detroit plant with the title of engineering stylist. He has been turned loose on 1932 models, with carte blanche to give Hudson-Essex his idea of body lines that will make the 1932 buyers sit up and take notice.

* * *

OF the 200 new statutes that became effective in Michigan last Friday, there is one that is of interest to the automobile industry. That is the one under which motor buses and trucks operating for hire are subject to the provisions of the Green and Engel acts, which broaden the regulatory powers of the Michigan Public Utilities Commission, giving it jurisdiction over contract carriers.

The commission already has taken advantage of this, and has issued a list of new regulations. One change is that insurance must be carried to protect other users of the highway. The minimum amount of insurance covering property damage is $3,000. For personal injury, a minimum of $20,000 must be carried.

* * *

FROM the Upper Peninsula comes word that the Baraga (Mich.) Grange has passed a resolution against Henry Ford's recent edict "No gardens, no jobs" to his employees. The farmers claim the Ford order to force his married employees to plant gardens in order to stay on the pay roll is "un-American and contrary to the spirit of American institutions."

The farmers say that, with the market for farm produce slumping the way it has, the enforcement of the Ford edict will mean a loss of business to farmers and that they will be unable to purchase trucks, tractors or farm machinery.

* * *

CHARLES SCHERMERHORN has discovered a new racket and he has passed the story along to his friend, Lee J. Smits, who prints it in his column, "Sidewalks of Detroit," in the Detroit Times. Schermerhorn relates that while waiting in his car in front of his own home he was approached by a well-dressed stranger, who told him that while he was making a call his car had been towed away. He didn't have a nickel in his pocket, couldn't phone home and had no way of getting there. Could he have bus fare? Two nights later Schermerhorn was again waiting in his car when the same chap came along, started to tell his story, but upon recognizing his benefactor he fled without finishing his tale.

Sports Arena on Roof Aids Bridgeport Dealer

Brings In Weekly Profit in Addition to Considerable Advertising and Direct Contacts With Ford Prospects

MAKING the roof of an automobile dealership building pay an average weekly profit of $100 as well as provide extensive and invaluable advertising is the achievement of L. J. Guilbeau, president of the Guilbeau Motor Company, Ford dealership, of Bridgeport, Conn.

When the present Guilbeau plant, one of the largest dealership structures in the East, was erected two years ago, a flat roof was laid with a 32-foot ramp leading to it from the second floor, also reached by a ramp. The idea at that time was that the roof could be used for parking or storage of cars. Due to the great size of the building, as well as two other locations in the city used by the company for sale of used cars, the roof space was not made use of during the first year.

Last spring Mr. Guilbeau decided that his broad roof, with its excellent ramp approach, should not be wasted, and he approached a group of Bridgeport boxing promoters. A deal was made whereby the promoters were given the privilege of erecting an arena on the roof, the dealership to receive a percentage on each ticket sold as rent.

During the summer months, boxing cards have been staged weekly on the roof, with an average attendance of 1,400. The present arena has seating capacity of about 2,500, but more than two-thirds of the roof is still unused and it is possible to erect bleachers seating over 7,000. At a special boxing event to be staged by the Bridgeport Police Department soon, it is expected that about 10,000 will jam the Guilbeau roof, including 3,000 standees.

All expenses connected with staging of the bouts are borne by the promoters, including lighting current, erection of ring and bleachers and insurance. Mr. Guilbeau finds that his average net return for a weekly show is more than $100.

While this sum is not large, Mr. Guilbeau finds that the advertising value of the bouts is great. The crowd enters the building at a large double door on the street side, crosses the floor where a number of new model Fords are on display and proceeds up a ramp to the second floor. On this level is another display of new cars, and the crowd walks through a part of the service department, where the fans have an opportunity to see a portion of the Guilbeau service department. They then walk up the second ramp to the open-air roof.

As the fans reach the arena they are "clocked" by a Guilbeau employe, who renders an actual count of the attendance. There is also an employe of the dealership stationed in the box office to check ticket sales, so that the percentage may be figured correctly. Due to the width of the ramps, the building is usually emptied at the end of the program within five minutes.

The central location of the motor company's showroom (but three minutes' walk from the center of the downtown district) makes it an ideal location for an outdoor arena, as under ordinary conditions rent of a suitable plot of ground in the center of the city would be prohibitive.

Since the boxing programs were started Mr. Guilbeau has noted a consistent rise in volume of service business, which he attributes largely to the advertising accorded that department through the passage of hundreds of people once a week. Although an industrial city, the caliber of fans who attend the boxing matches is unusually high, so that a number of them are live prospects for car sales and service.

In reporting the matches all Bridgeport newspapers refer to the location as the "Guilbeau Roof Arena" and often mention the motor company, so that the firm's name is widely broadcast. A large sign on the roof, visible to most of the fans, advertises the business.

It now appears that, weather permitting, the matches will be continued until late in October. Attendance at the bouts has been greater this year, despite the depression, than was noted when summer cards were staged at more remote outdoor locations.

When the roof season closes Mr. Guilbeau plans to repeat several exploitation stunts which proved popular last year. Beginning in October, weekly dances, without admission charge, will be staged on the main showroom floor. In several cases last year the music of the orchestra was broadcast over Station WICC, Bridgeport.

These events last winter drew large crowds to the building and created considerable favorable notice about the city. The broadcasts, particularly, attracted attention, as the Bridgeport station has a wide circle of listeners in Connecticut and nearby states.

Two fashion shows, staged in conjunction with a local department store, are planned for this season, one in October and another in March. A show held last March to introduce spring fashions, as well as the Ford line, drew wide notice. Thirty-five models were imported from New York city for the event. More than 9,000 persons, by actual count of a clocker, attended the show.

WARD NAMED SALES MANAGER

San Antonio, Tex., Sept. 22.—Ward H. Miller has joined the Milam Chevrolet Company as sales manager. Luther A. Williams and A. J. Huffington, two experienced salesmen, have also joined the organization. Marcus H. Clark is general manager of the firm.

NEW BUS TERMINAL

Waycross, Ga., Sept. 22.—Georgia Public Service Commission has granted the application of the Greyhound Bus Lines for the establishment of a bus station in this city.

HITS COMPULSORY INSURANCE LAW IN MASSACHUSETTS

Swampscott, Mass., Sept. 22.—Denouncing the automobile compulsory insurance law in Massachusetts as one which does not protect citizens of the state against injuries caused by out-of-state cars, which he said caused up to 45 per cent. of the accidents, Edward C. Stone urged the International Association of Insurance Counsel members to help in bringing forth a remedy for the "existing evils."

Mr. Stone, who is United States manager of the Employers' Liability Assurance Company, Ltd., of London, was the principal speaker at the second day's session of the association at Swampscott. Discussing the Massachusetts statute he said in part:

"The law is not extra-territorial, and the law does not afford protection to persons who may be injured outside of Massachusetts by either Massachusetts or out-of-state cars. The owner, however, can purchase from insurance companies an extra territorial indorsement for a small amount which will protect him in this particular.

"Another part of the public that is without protection under the act," he said, "are those persons injured through accidents happening on private property. And this covers accidents happening in garages, at gasoline service stations, private parking places and many private ways."

He pointed out that non-resident owned cars have caused the following fatalities: 669 accidents resulting in 32 deaths in 1926; 647 fatalities resulting in 30 deaths in 1927; 694 fatalities resulting in 32 deaths in 1928; 739 fatalities resulting in 39 deaths in 1929, and 735 fatalities resulting in 53 deaths in 1930. And out of the accidents occurring in 1929, he said, it is estimated that 1,600 to 1,800 were caused by out of state cars. But in 1930 the estimate is from 3,000 to 3,500 accidents caused by out of state cars.

The combined experience of all the companies up to date under the act, four years, showed that the companies lost over $9,000,000, said Mr. Stone, because the rates fixed by the insurance commissioner have never been adequate.

Although the rates for 1929, 1930 and 1931 were increased each year over the preceding year, it has clearly been demonstrated that they were not sufficiently increased, he said. It will probably be shown that the 1931 rates are inadequate, he continued, for the business depression through which we have been passing and which has causer liability insurance losses to mount makes this forecast certain.

SAFETY GLASS
will contribute to
NEW CAR SALES

No manufacturer can afford to ignore public demand. The demand for Safety Glass as a necessary, common sense measure of protection is universal. In the near future no new car will meet public approval without it. Libbey·Owens·Ford Safety Glass has a decided preference in the public mind—because it has demonstrated its unusual qualities of long life and clarity of vision.

LIBBEY·OWENS·FORD GLASS COMPANY, TOLEDO, OHIO

Manufacturers of Highest Quality Flat Drawn Window Glass, Polished Plate Glass and Safety Glass; also distributors of Figured and Wire Glass manufactured by the Blue Ridge Glass Corporation of Kingsport, Tenn.

The following are users of L. O. F. Safety Glass: Packard, Graham, Studebaker, Franklin, Reo, Willys, Willys-Knight and Ford. It is also used in Dietrich and Le Baron Custom Bodies, Reo Speed Wagons, Paige Commercial Cars, Twin Coaches, Brill Trolley Buses, Cincinnati Trackless Trolley Coaches, Bender Bus Bodies, Hackney and Springfield School and Passenger Bus Bodies, White School Buses, York Hoover School Bus Bodies, Stinson and Stearman Aircraft, Gar Wood Boats and Matthews Cruisers.

LIBBEY·OWENS·FORD
SAFETY GLASS

PROFIT *goes up—*
while
OVERHEAD *stays down!*

To take on a second line—*if* the careful choice of that line falls upon Pierce-Arrow—can well turn the balance of a dealer's business to the profit side.

The following quotation from the letter of a dealer who joined Pierce-Arrow to his other line leaves an impressive and conclusive thought:—

"Our gross sales up to the first of the month on Pierce-Arrow have been $41,231.25, with a gross cost of $30,703.68, giving us a gross profit of $10,527.27, which I feel has been more or less picked up on the side, as these sales were handled with very little additional overhead."

Dozens of similar instances can be cited. Frequently Pierce-Arrow quickly *develops into the real money-maker* for the house.

Act now to get your own business on a profitable—or more profitable—basis. Pierce-Arrow is operating on a real sales system that works. For full particulars address Pierce-Arrow Motor Car Co., Buffalo, N. Y.

PIERCE-ARROW

AMERICA'S FINEST MOTOR CAR

Automotive Daily News

"Of, By and For the Entire Automotive Industry"

Published Every Day Except Sunday and Monday by
AUTOMOTIVE DAILY NEWS PUBLISHING CORPORATION,
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WEDNESDAY, SEPTEMBER 23, 1931

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The Twelves Are Coming

BY every law of logic and past experience we are due to see an influx of twelve-cylinder engines within the next few months. At the moment Cadillac and Marmon are the sole dispensers of twelve-cylinder cars, but we know of more twelves that are due for unveiling in the not distant future. We may also say that sixteen-cylinder engines are also due for greater use.

History indicates this development unerringly. In the dim beginnings of things automotive single cylinder engines were all that could be had. Then came two-cylinder power plants and the automotive world sat back and figured it was doing pretty well. With the coming of the four the engineers congratulated themselves that they were nearing perfection.

And then American genius, taking stock of itself, decided that perfection was some distance off and handed out the six-cylinder engine. Then came a battle between the fours and the sixes, which has lasted even unto this time.

But back, we believe, about 1913 one manufacturer took a further step forward. Cadillac announced its V-type eight-cylinder power plant. This was in the nature of an evolution; it was development by progressive multiplication of the cylinders. Cadillac doubled the four. If we remember rightly, it was only a few months before several other makers announced eights, but none of these lasted very long. The power plants simply did not prove satisfactory in service.

When Packard many years since introduced its "twin six," there was a rush of makers piling into that particular field. None of them lasted.

Which brings us to the moral of our sermon. We trust that the new twelves, which will undoubtedly make their appearance, are not mere hastily designed units, not having behind them due study and development, intended simply to let their makers rush into what seems to be a new and promising field. There is no reason why twelves and sixteens, too, should not have a definite place in automotive development, but they must be sincerely designed power plants and not mere opportunism in search of elusive profits in a dull business era.

GENERAL MOTORS TRUCK has released some preliminary figures on the operation of its truck and trailer in the trip from Los Angeles to New York, carrying a load of perishable freight iced by a Frigidaire unit. These figures will be of great interest to every one connected with long distance haulage of freight.

The miles traveled between Los Angeles and New York were 3,200, exclusive of detours. The elapsed time was 260 5/10 hours and the running time was 117 5/10 hours. The average speed was 27.39 miles per hour. Gasoline consumed amounted to 1,147 gallons, an average of 2.79 per gallon. Thirteen quarts of oil were used.

The average temperature of the engine was 196 degrees, of the oil 195 degrees and of the power transmission 193 degrees. The compound transmission showed a temperature of 191 degrees, the front rear axle of 189 and the same figure stands for the back rear axle.

One of the most interesting phases of the freight hauling operation is, of course, the condition in which the perishable freight arrived. This perishable matter included oranges, lemons, figs, dates, eggs and many other items of equally delicate character. The average temperature of the produce when the doors of the truck were opened in New York was btween 35 and 36 degrees. The temperature of the fruit in the center of the boxes averaged 34 degrees. Representatives of fruit growers' associations in New York reported that they never had received shipments of this kind in such excellent condition as were these.

Later on complete records of this trip, with minute statistical information covering every phase of the operation, will be made available and this information will undoubtedly be of sweeping interest to commercial highway operatives. Even now the trip would appear to have opened a wider vista of service in long distance motor hauling.

S. A. E. Members Have Day At Nat. Metal Congress

(Continued from Page 1)

ening. At night the annual banquet of the organization will be held in the Georgian room of the Statler.

The following are the programs for tomorrow, September 23.

AMERICAN SOCIETY FOR STEEL TREATING

Morning Session

Statler Ballroom 9.30 a. m.—Annual meeting of the American Society for Steel Treating. Campbell Memorial lecture by C. H. Herty, Jr. Chairman, Dr. Zay Jeffries.

Afternoon Session

Melting session, Statler Ballroom, 2 p. m.

Joint Chairmen—G. B. Waterhouse and G. V. Luerssen.

2 p. m.—Melting of Crucible Tool Steel, by Owen K. Parmiter, Firth-Sterling Steel Company, McKeesport, Pa.

2.30 p. m.—Open-Hearth Process, by C. H. Herty, Jr., United States Bureau of Mines, Pittsburgh.

3.00 p. m.—Making of Acid Electric Steel for Castings, by George Batty, Steel Castings Development Bureau, Philadelphia. (To be presented by R. A. Bull.)

3.30 p. m.—Melting of Tool and Other High Grade Steels in the Basic Electric Furnace, by J. P. Gill and M. R. Trembour, Vanadium Alloys Steel Company, Latrobe, Pa.

4.00 p. m.—Ingots, Ingot Molds and Castings, by G. A. Dornin, Baltimore.

4.30 p. m.—Development of Italian Industry Making Special Steels and Irons, by Dr. Federico Giolitti, Torino, Italy.

SOCIETY OF AUTOMOTIVE ENGINEERS

9.30 a. m., Georgian Room, Hotel Statler. Chairman, F. P. Gilligan, Henry Souther Engineering Corporation.

Heat Treating Methods and Costs, E. F. Davis, Warner Gear Company.

Recent Developments in Heat Treating Ball Bearing Races, Dr. Haakon Styri, SKF Industries, Inc.

Characteristics of Alloyed Cast Iron, F. W. Shipley, Caterpillar Tractor Company.

AMERICAN WELDING SOCIETY

9.45 a. m.—Technical session. Presiding officer, H. P. Peabody, chairman Boston section, A. W. S.

The Future of Welded Ship Construction, by J. Kjekstad, United Dry Docks, Inc.

Resistance Welding of Metal Fabric, by W. T. Ober, Thomson-Gibb Electric Welding Company.

Four Problems Encountered in Flash-Welding Mild Steel, E. R. Torgler, S. R. Dresser Manufacturing Company.

2.00 p. m.—Technical session. Presiding officer, C. A. McCune, past president.

The Engineer, the Welder and the Foundryman, by P. J. Horgan, Lynn Works, General Electric Company.

Maximum Stress: Its Influence on Cost and Service Life of a Structure, by Everett Chapman, Lukenweld, Inc.

Welding of Galvanized Steel, by H. F. Reinhart, chief engineer J. B. Colt Company.

Fatigue Properties of Welds, by R. A. Weinman, General Electric Company.

American Institute of Mining and Metallurgical Engineers

8.30 a. m.—Inspection trip to Bethlehem Shipbuilding Corporation, Fore River plant, Quincy, Mass.; option, a combined trip to the Boston Gear Works, Norfolk Downs, Mass., and Pneumatic Tool Company, Norfolk Downs, Mass.

12.15 p. m.—Luncheon meeting, executive committee Iron and Steel Division. Parlor B, Hotel Statler.

12.15 p. m.—Luncheon meeting, advisory committee A. S. T. M. Committee B-3 on Corrosion of Nonferrous Metals. T. S. Fuller, chairman. Hotel Statler.

2.00 p. m.—Institute of Metals and Iron and Steel Divisions. Ballroom foyer, Hotel Statler.

Joint session on Age Hardening: N. B. Pilling, International Nickel Company, Bayonne, N. J., chairman; W. E. Ruder, General Electric Company, Schenectady, vice-chairman.

Preparation of Graded Abrasives for Metallographic Polishing, by J. L. Rodda, New Jersey Zinc Company, Palmerton, N. J. (T.P. 438).

Age-Hardening of Austenite, by F. R. Hensel, Westinghouse Electric and Manufacturing Company, East Pittsburgh (T.P. 419).

Some Developments in High-Temperature Alloys in the Nickel-Cobalt-Iron System, by C. R. Austin, Pittsburgh, and G. P. Halliwell, Carnegie Institute of Technology, Pittsburgh (T.P. 430).

Age-Hardening Copper-Titanium Alloys, by F. R. Hensel and E. I. Larsen, Westinghouse Electric and Manufacturing Company, East Pittsburgh (T.P. 432).

6.30 p. m.—Joint dinner of Institute of Metals and Iron and Steel Divisions. Georgian Room, Hotel Statler. (Informal. Ladies invited.)

Alan Kissock, vice-president Climax Molybdenum Company, will give a non-technical talk on "Molybdenum."

COMING EVENTS

SEPTEMBER

21-25—**Boston, Mass.** American Welding Society meeting. The following societies will participate: American Society for Steel Treating, American Welding Society, Iron and Steel Division, A. S. M. E.; Machine Shop Practice Division, A. S. M. E.; Iron and Steel Division, A. I. M. E.; institute of Metals, A. I. M. E.

26-Oct. 2—**Atlantic City, N. J.** American Electric Railway Association, annual meeting.

28-29—**Atlantic City, N. J.** National Association of Motor Bus Operators, fifth annual meeting, Hotel Ambassador.

OCTOBER

1-11—**Paris, France.** International Automobile Salon.

2- 3—**Houston, Tex.** American Institute of Mining and Metallurgical Engineers, petroleum division meeting.

7- 8—**Detroit, Mich.** Society of Automotive Engineers, national production meeting.

12-13—**Pittsburgh, Pa.** Pennsylvania Automotive Trades Association, convention.

12-16—**Chicago, Ill.** National Safety Council.

14-16—**Pittsburgh, Pa.** Society of Industrial Engineers, convention.

14-15—**Albany, N. Y.** New York Automobile Dealers Association, convention

15-17—**Pittsburgh, Pa.** American Gear Manufacturers Association, convention

15-24—**London, England.** International Motor Exhibition, Olympia Hall.

19-22—**Chicago, Ill.** National Hardware Association, convention.

22-28—**Prague, Czecho-Slovakia.** International Automobile Exposition.

22-28—**Prague, Czecho-Slovakia.** International Automobile Exposition.

23—**New York City.** American Iron and Steel Institute, convention.

27-28—**Chicago, Ill.** American Railway Association, Motor Transport Division, meeting

NOVEMBER

5-14—**London, England.** International Commercial Motor Transport Exhibition, Olympia Hall.

10-12—**Chicago, Ill.** American Petroleum Institute, annual meeting, Hotel Stevens.

28-Dec. 9—**Brussels, Belgium.** Automobile Salon.

29-Dec. 5—**New York, N. Y.** Automobile Salon, Hotel Commodore.

30-Dec. 4—**New York City.** American Society of Mechanical Engineers, annual meeting.

DECEMBER

7-12—**Atlantic City, N. J.** Motor and Equipment Association and National Standard Parts Association, Joint Trade Show.

9-11—**Atlantic City, N. J.** American Institute of Chemical Engineers, meeting.

JANUARY

11-14—**Detroit, Mich.** American Road Builders Association, twenty-ninth convention and show.

9-16—**New York City, National Automobile Chamber of Commerce, National Automobile Show.**

9-17—**Los Angeles.** Annual Automobile Show of the Los Angeles Motor Car Dealers Association.

16-23—**Newark, N. J.** Newark Automobile Dealers' Association's annual show.

16-23—**Buffalo, N. Y.** Annual automobile show of Buffalo Automotive Trade Association, Inc., 174th Regiment Armory.

23-30—**Minneapolis.** Annual Automobile Show of Minneapolis Automobile Trade Association.

30-Feb. 6—**Chicago, Ill. National Automobile Chamber of Commerce, National Automobile Show.**

30-Feb. 6—**Chicago, Ill. Automobile Salon.** Hotel Drake.

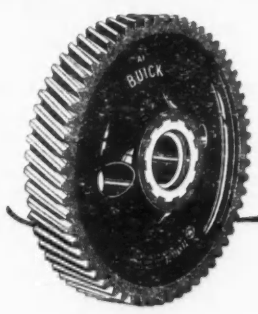
FEBRUARY

13-20—**Los Angeles, Cal.** Automobile Salon Hotel Biltmore.

22-March 5—**San Francisco, Cal.** Automobile Salon, Palace Hotel.

NATIONAL BATTERY GROUP TO MEET IN CLEVELAND

Cleveland, Sept. 22.—The next meeting of the National Battery Manufacturers Association will be held on October 23 and 24 in this city. The purpose of these meetings is to keep improving the battery industry, of which the dealer—the battery man—is just as much a part as the manufacturer.



TEXTOLITE TIMING GEARS

Durability

Automobile owners, year by year, are demanding more mileage from their cars before replacement. The manufacturer who designs and builds durability into his job so as to keep maintained performance with nominal upkeep after 40,000 miles will dominate the new market.

A non-metallic timing gear, at 50,000 miles, will have cost the car owner nothing for adjustment or replacement—will still be quiet—and will still be timing the valve mechanism exactly as it was set originally by the manufacturer.

There is no compromise with accuracy in a good gear drive. It is a token of good manufacture throughout the car.

JOIN US IN THE GENERAL ELECTRIC PROGRAM, BROADCAST EVERY SATURDAY EVENING ON A NATION-WIDE N. B. C. NETWORK 830-76

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y., SALES OFFICES IN PRINCIPAL CITIES

Economies of Modern Furnace Installations

Presented at the S. A. E. Session, Metal Congress in Boston, Today.

By E. F. DAVIS
Warner Gear Company

OF all the metallurgical developments in recent years, none equals in importance the modern furnace. Without its aid the application of metallurgical principles to production manufacturing would be impossible. With its assistance the uncertainty of uniform physical qualities in steel has been largely overcome.

In selecting material for construction the engineer must be guided by definite mathematical formulae and certain physical properties inherent in the material he selects. But between him and the final product lies a mysterious and devious path which the steel must journey before it becomes a part in some unit. On account of the mishaps which may happen to steel from the furnace in which it was created to the time it becomes a vital part in some assembly, he must design the part with more mass than actually need be to function without failure. He must allow a factor of safety. He must construct it three to twelve times stronger than his formulae for stresses and strains indicate, for otherwise it might break in service. But the pressure for reducing material costs due to competition, the urgency for lighter sections, the removal of metal, wherever possible, and the increases of stresses have compelled the engineer to lower the factor of safety, and the metallurgist has been forced to eliminate, as much as he can, the variables which enter into the manufacture and heat treatment of steel.

You may establish any definite heat-treating cycle, but there is never any guarantee that such a cycle will be followed if one depends upon a group of workmen to perform the operations. On the other hand, substitute a mechanical furnace where the elements of time and temperature are under sensitive control and make such a furnace as automatic as it is practical and you have not only eliminated the source of the variables, but you have also eliminated the men who caused them.

During the last ten years I have seen carburizing costs decrease from 10 cents per pound to 9 mills per pound. With two men, our carburizing furnaces are producing an equivalent output to twenty men by the old box furnace practice. The present furnaces used are of the return recuperative type. In this design of furnace the boxes are pushed on roller rails the length of the furnace, whereupon they are pushed by a cross pusher to an adjacent roller rail and a rear pusher finally brings them out the same door they enter. The outgoing boxes give up a portion of their heat to the incoming boxes. This counterflow principle enables the conservation of a percentage of the heat, so that the boxes leave at about 700 degrees F. on the outside and 1,100 degrees F. on the inside. The furnace is electrically heated and entirely automatic in operation. The furnace operators' duties consist of loading the boxes and unloading them after they have been cooled. They have nothing to do with the furnace operation. We have standardized cycles of pushing for 0.030, 0.040, 0.050 and 0.060 inch case, which is held within 0.005-inch variation. Control of carburizing temperatures is held within 10 degrees. Provisions are also made for the mechanical handling of carburizing compound and mixing a definite amount of new with the old. The size of the carburizing grains are also under control, to allow for the abrasive action in mixing, and effective suction fans remove the dust.

Now let us consider what has happened by this installation. We have no men adjusting burners and trying to hold the furnace to the required temperature. We have no trouble with heats going wild due to failure of some one to observe this fact. We have no variations in carburizing depth such as was common in box furnace practice, which often varied from 75 to 150 degrees in different parts of the furnace. We have no arduous toil of loading boxes into the old-fashioned square furnaces. We do not have the trouble due to the case spalling in grinding on account of excessively high carburizing temperatures and excessive cementite on the carburized layers. We have very little trouble on account of soft spots. We do not have gears returned on account of too thin cases and excessive wear. We do not have field troubles due to defective carburizing.

Our plant is engaged in the manufacture of gears and, incidentally, free-wheeling units. The annealing of steel is an extremely important one to us. The machining department demands ease of cutting for high speed and feeds in blanking, and the gear-cutting departments insist upon smooth tooth finish. In nearly all types of gear steel there is a phase in the microstructure whereby the maximum machinable qualities are obtained. Some of these structures are more or less fugitive and require carefully worked-out heating and cooling cycles in order that this may be accomplished. It is one thing to establish a heating and cooling curve in a scientific manner and another to make it work out correctly in furnaces disgorging nearly a ton of annealed forgings per hour. Without the continuous annealing furnace under automatic control such a process could not be done when annealing is performed en masse. But with gear forgings passing through various zones of heating and cooling we are able to be assured that the correct microstructure will obtain within the limitations of steel uniformity. The continuous furnace has demonstrated the fact that various heats of steel of similar chemistry do not respond alike to standardized annealing methods, and the steel mills are yet lacking in their ability to produce a uniform product.

The economies afforded by continuous annealing are not principally in fuel saving or labor reduction, although these are both tangible items. The big saving is in faster machining speeds and feeds, lower tool expense, the reduction of rejections due to noisy gears and general improvement in production conditions. We never have the epidemics of noisy gears such as we formerly did when box-furnace annealing was in vogue. We still have some gear trouble, and no doubt always will, but we know where to locate our troubles.

Not only in our line of work but in many others have modern furnaces solved manufacturing difficulties. The continuous sheet-normalizing furnace has been of great service to the automotive industry in producing a quality of sheet suitable for the deep drawing operations necessary for the fender and body of modern motor cars. This process is similar in exactitude to the way gear annealing is done, for definite cycles must be maintained in order that the correct microstructure for maximum deep drawing qualities will result.

The bar-normalizing and heat-treating furnaces now installed in some of the leading steel mills are giving us long bars normalized or heat treated to a degree impossible in the older car type equipment formerly used.

Nearly all classes of automotive parts are now being heat treated in continuous furnaces. We have V-type pusher furnaces for piston pins and small shafts, alloy belt type furnaces for bolts, screws, coiled springs, ball and roller bearing rings. We have pusher types for flat springs, crank shafts, front and rear axles and cam shafts. I have witnessed the operation of one continuous furnace where three different hardnesses were obtained within narrow limits in one continuous heating operation.

(Continued on Page 6)

Noise in an automobile body is caused either by friction or by loose parts. To be silent, and to stay silent, therefore, a body should have no joints—no parts to rub together or work loose. In the one-piece body, Budd eliminates joints by the extensive use of flash welding—makes this body of but eight major parts, flash-welded into a single jointless unit. Result: a degree of silence unequalled in any other type of body.

★ BODIES BY BUDD ★

Originators of the All-Steel Body. Supplied to Manufacturers in the United States, Great Britain, France, Germany.

Economies of Modern Furnace Installations

(Continued from Page 5)

In our plant great stress is laid upon uniformity of heat-treating practice. The majority of our gears are hardened from cyanide in long rectangular pots. Over the tops of these pots we have two rotating screws upon which the work is hung by means of screws, the work itself being submerged in the cyanide. These screws, by their rotation, advance the work the length of the cyanide pot and are not removed until they have reached the opposite end of the screw. This insures us that every gear will have exactly the same time in the cyanide. They are then removed and hung on a similar screw arrangement in the quenching tank. The quenching tank is hooded, so that, once the gear is hung on the screw, it cannot be removed until it has traversed the length of the bath. The speed of rotation has been timed so that the gears will be thoroughly cooled before their removal from the bath if possible. After this they go into a tempering furnace of molten sodium nitrate, being hung on an overhead conveyor the speed of which is governed so that thirty-eight minutes are required for the gear to remain in the salt draw. It is impossible to remove these gears unless they complete this cycle. All of these furnaces are under automatic control, and we even have a pyrometric control on the quenching bath to maintain uniform oil temperatures.

Please note that the possibility of human error has been eliminated as much as practical. The economies are incalculable and the best indications of the results from these safeguards are the low rejections on this specific model and practically no returns from the field due to rejected gears.

We are yet in a state of crudity. There is yet much to be done in furnace development. The forging of steel is about due for an upheaval. Mighty presses are being built today of such rigidity that nearly perfect forgings are the probable outcome. If the problem of scale can be solved —and I have reasons to believe it can—it will be easy to make forgings within a few thousandths of an inch of finished dimensions. I have taken slugs of steel, heated them, hammered them under a steam hammer to a flat pancake and allowed them to cool without a particle of scaling on the surface of the finished piece. Consider the economies possible in the elimination of the roughing operation in production machining. I have also found it possible to anneal a .50 per cent. carbon chromium steel forging within one and one-half hours to the correct microstructure without the development of any scale on the surface of the metal. If steel can be forged and annealed without the loss of size due to surface oxidation, and the troublesome operations of pickling, tumbling and sand blasting can be omitted, some real progress will be accomplished. Furnaces can be designed to acomplish these things on a production basis, but the equipment necessary is revolutionary when we consider the crude types of heating furnaces still prevalent in the forging industry.

I will not discuss the relative values of different fuels. The cost per BTU produced can be obtained from any hand book. The type of fuel employed is based on metallurgical considerations rather than comparative B. T. U. cost.

Neither do I assert that electric heat is assurance that the furnace will heat more uniformly than with gas or oil. I have observed types of electric furnaces which would not harden carburized work without soft spots, due to the formation of closely adherent oxide on the surface. I have seen others which were nearly ideal in the hardening results obtained. The proper application of any fuel is therefore an important factor in any installation and vitally affects the economies of operation.

The continuous furnace is not for the small job shop with a wide diversity of product, but ideal for the various industries specializing in the manufacture of automotive parts where the output is more or less standardized and production quantities justify the expenditure. There are smaller hardening units which might be applicable to lesser sized plants with small or intermittent production, but even these require enough volume to make their investment profitable. On the other hand, the smaller plants do not have the production problems of the larger. When a plant attains a certain size, mistakes must not be made and troubles must not happen or anything occur which will interfere with the smooth flow of material through the different operations.

GOLF TOURNEY SEPT. 29

Newark, N. J., Sept. 22.—The autumn golf tournament of the Newark Automobile Trade Association will be held Tuesday, September 29, at the Suburban Country Club. Classes will be provided for guests of members, as well as for the golfers in the trade.

DODGE BROS. RETAIL DELIVERIES CONTINUE SEPTEMBER UPTREND

(Continued from Page 1)

contributed largely toward stepping up the overall figure as retail deliveries, for the week ended September 5 exceeded the previous week by 12.9 pr cent. and the same week a year ago by 27.1 per cent. Incidentely, retail deliveries of trucks for the first seven months of 1931 are 5.2 per cent. ahead of the same period in 1930.

Furthermore, Dodge reports that with the exception of the week ended August 29, when a decrease of 2.8 per cent. was recorded, retail truck deliveries have exceeded every corresponding week in 1930 for the past ten consecutive weeks.

These recorded increases bear out the statement of General Sales Manager van der Zee, made several months ago following a personal survey of business conditions in various sections of the country, that Dodge Brothers' business is headed definitely upward.

WILLARD WILL GET TAX REFUND OF $1,000,000 RESULT OF DECISION

Cleveland, Sept. 22.—The Willard Storage Battery Company of Cleveland will receive a tax refund from the Federal government of more than a million dollars as a result of a decision by Judge Samuel H. West of the United States District Court.

Storage batteries, Judge West held, are not part of an automobile. They are equally useful in an automobile, a power boat, a radio or a dentist's drill. The battery antedated the automobile, he said.

The Willard company between 1922 and 1926 had been required to pay excise taxes to the internal revenue department on batteries sold to jobbers under a law requiring taxation on automobile parts and equipment.

Judge West's decision in all probability will be appealed by the internal revenue department, according to Wilfred J. Mahon, United States district attorney here. Special government counsel from Washington assisted in the case and two important law firms represented the battery manufacturer. In addition to the return of more than $745,000 paid in taxes, the Willard company asked for about $330,000 in interest.

CANADIAN EXPORTS OF CARS AND TRUCKS 38% LESS THAN 1930

(Continued from Page 1)

place with increased takings of 104 per cent. in passenger cars and 115 per cent. in trucks. Other increases in the sales of passenger cars were noted in the cases of the Straits Settlements, Trinidad, New Zealand and Tobago, while increased purchases of trucks were made by Portuguese Africa, Trinidad, Tobago and Egypt.

PHILADELPHIA BOOSTERS CLUB NAMES ITS SLATE

Philadelphia, Sept. 22. — Annual elections of the Philadelphia Boosters Club resulted in the selection of Elias Shapiro and Harvey S. Plummer as president and vice-president respectively.

CUMULATIVE NEW PASSENGER CAR

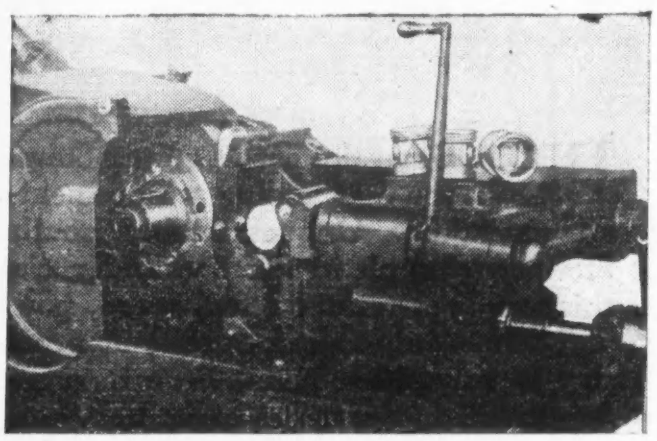
Figures in this table are from R. L. Polk & Co. of Detroit, with the exception of Illinois, which are supplied by the Robinson Advertising Some of this data has been published previously, but it is given here complete for the convenience of our subscribers. Readers desiring

In this table 28 states and the District of Columbia **Returns for today: Arizona, Indiana, Iowa, Michigan,**

States	Auburn	Austin	Buick	Cadillac	Chevrolet	Chrysler	Cord	De Soto	De Vaux	Dodge	Durant	Essex	Ford	Franklin	Graham	Hudson	Hupmobile	La Salle
Arizona	2	1	33	1	124	5		4	2	11		2	147		1	5		
Arkansas	3		13		410	21		9		20		2	354		11	1	1	1
Conn.	60	1	173	15	590	93	1	84	27	105	6	56	493	5	35	32	21	10
Delaware	4	1	23	4	130	21		3	2	1	6	5	128	1	1			1
Florida	24	1	49	5	531	42		14	3	24	5	25	625	4	18	25	8	5
Idaho	9	2	16		147	7		9	7	12	4	2	127	1	4	6	2	
Illinois	215	11	410	56	2486	316	12	240	31	268	26	164	2788	19	83	71	79	48
Indiana	75	2	148	8	1233	111	9	136	10	127	10	104	858	4	38	26	32	4
Iowa	29	3	87	10	1281	66	1	33	20	110	23	58	897	2	27	36	16	7
Maryland	32	3	86	2	1017	81		28	2	53	19	69	727	3	31	18	32	3
Michigan	38	2	179	29	1179	148	1	73	30	160	16	123	1133	2	50	61	39	10
Minnesota	30		100	9	1069	114	1	35	6	60	13	51	752		45	33	39	5
Missouri	63	6	176	11	2141	85	2	69	6	164	27	72	1492	2	47	24	43	13
Montana	8		26		167	17		12	8	24	6	12	156	2	2	11	2	
N. Hamp.	9		21	1	143	9		6	2	9	3	12	161	5	9	6	2	1
N Jersey	121	7	418	68	1801	252	1	86	44	158	62	131	1385	13	63	54	71	36
Nor. Car.	24	2	69	3	880	73	1	16	5	63		40	935	2	7	14	2	1
No. Dakota	2	1	6		79	6			7	4			106		1		1	
Ohio	101	7	186	26	1730	192	3	177	22	183	27	169	1685	18	76	63	60	17
Oregon	15	2	32	7	261	25		29	12	19	8	3	216	1	21	8	3	5
Penna.	248	17	652	67	3447	562	4	267	52	422	52	305	2695	29	181	130	133	52
Rho. Isl.	24	7	75	9	275	55	1	65	5	39		40	290	5	7	6	18	6
S. Ca'lina	12		33		535	28	1	13	4	19		18	479		4	11	7	1
So. Dak.	3	6	13		244	16	1	12	13	21		8	182		2	6	4	
Utah	1		20	2	63	6		4	6	4	1	7	83		10	3	3	1
Virginia	21	5	88	10	1262	83		58		80	3	54	1038		18	23	32	3
W. Va.	30	1	39	4	464	59	1	19	11	95	1	28	500	2	36	12	12	3
Wisconsin	43	3	135	13	924	73	3	53	15	95	11	49	671	3	38	20	17	11
D. of C.	22		70	10	495	42		33	1	41	5	28	590	3	22	12	27	8
Total	1268	91	3376	370	25108	2608	43	1587	353	2391	334	1637	21693	126	888	717	708	252
Ariz., '30	1	4	72	2	126	18		8		17	8	5	241		8	4	4	1
Ark., '30		6	47	5	428	41		11		33	2	5	670	1	18	4	2	2
Ct., 1930	20	26	360	33	569	137	3	89		95	17	150	999	14	43	62	60	19
Del., '30	2	4	79	5	136	19		3		2	10	12	238	1	2	5	3	3
Fla., '30	7	17	99	2	474	39	3	16		20	3	26	841	4	41	24	9	4
Idaho, '30	2	2	56		247	15		15		23	24	8	375	1	9	3	5	
Illinois, '30	34	47	979	58	2503	347	26	218		258	45	162	4433	39	114	89	125	53
Ind., '30	24	32	342	14	1163	114	9	85		84	16	110	1764	8	58	69	37	10
Iowa, '30	15	31	260	6	1770	85		20		129	61	81	2092	4	40	61	24	8
Md., '30	5	6	250	3	917	67	1	16		31	11	46	976	7	34	21	31	16
Mich., '30	6	46	890	64	1313	126	3	34		71	34	118	3198	6	55	98	29	26
Minn., '30	3	11	246	8	1175	118	1	28		60	26	70	1428		46	48	37	7
Mo., '30	14	28	372	16	1996	114	3	45		123	44	67	3066	4	71	44	63	28
Mont., '30	2	1	57	2	486	23	3	23		39	14	25	575	5	8	29	13	2
N. H., '30	5	7	70	4	168	25	1	11		16	7	25	266	2	3	15	9	2
N. J., '30	54	62	920	54	1520	287	12	78		154	56	201	2838	16	88	128	109	38
N. C., '30	2	10	156	6	829	74		14		56	2	41	1383	1	10	31	7	5
N. D., '30		1	14		153	8		2		7	7	7	172		5	2		
Ohio, '30	56	37	835	62	2322	242	10	168		179	69	283	4123	33	96	157	94	33
Ore., '30		25	140	2	311	34		25		37	34	17	546	6	31	17	9	2
Pa., 1930	59	101	1559	97	3184	690	8	291		427	124	369	5839	42	274	179	205	65
R. I., '30	6	7	118	4	257	57	1	32		39	2	32	426	3	18	21	10	7
S. C., '30		12	65		507	20		10		16	2	10	656		3	15	7	2
S. D.,'30		6	40		351	32		7		29	21	12	516	2	10	11	8	2
Utah, '30		2	30	1	99	8	1	5		10	20	8	156	2	8	5	3	2
Va., '30	3	18	113	1	1000	65		38		62	7	39	1161	2	37	23	38	5
W. Va., '30	5	6	80	4	533	59		29		66	13	40	787	3	35	15	10	3
Wis., '30	9	9	420	32	951	95	1	41		81	31	73	1348	1	50	47	25	14
D. of C., '30	10	7	146	7	313	40	2	20		21	9	42	904	3	22	16	19	5
Total, '30	344	572	8815	492	25801	2999	88	1382	*	2185	719	2084	42017	210	1237	1243	995	364

*Not in production.

New Method for Piston Relief Finishing



CINCINNATI Modified Centerless Grinder

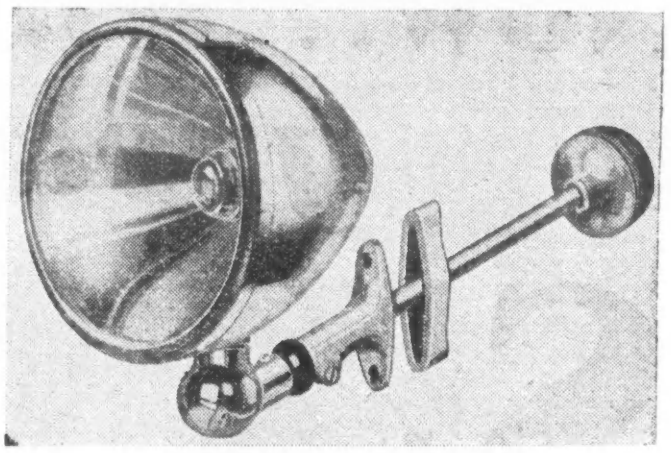
A MODIFIED centerless grinder for finishing four reliefs on pistons at a fast production rate has been developed by Cincinnati Grinders, Inc., Cincinnati, O.

A special work holding and driving unit replaces the regulating wheel housing and upper and lower slides of the Cincinnati No. 2 Centerless Grinder. Drive to this special unit is from the regular feed box.

Piston is placed on a mandrel and is rotated by a floating driver. Downward movement of operating lever engages a clutch which transmits drive to the work. The piston is supported by three sets of rollers and, as the operating lever is brought down, the upper roll at the right brings the work forward to its pivoting support and exerts the proper pressure on the work for grinding. A cam, which provides an oscillating movement to the work for grinding the relief portions, is also actuated by the downward lever movement. The work rotation is timed with the cam so that the piston is relieved correctly. After reliefs are ground, operating lever is raised, thus stopping the cam controlled work oscillation and disengaging the clutch for driving the work.

With a .003 in. stock removal, five pistons are properly relieved per minute by this new method.

Condon Introduces Inner Control Raylite Lamp



CONDON inner control Raylite

The Condon Corporation of Chicago has announced new Raylite and Raylite, Jr., universal inner control driving lights. Among the features to which the makers call attention are the screw-on face, designed to give protection against possible damage to the reflector when bulbs are changed and the double reflector, which throws rays from the bulb filament onto the parabolic reflector, for the purpose of not only multiplying all the rays from the bulb but of furnishing a more concentrated, farther reaching and more evenly distributed light.

This company also is offering a new Masterlite. The feature of this, emphasized by the makers, is the sliding contact designed to make positive connection at all times to eliminate the possibility of breakng wires as well as preventing short circuits. The complete universal movement of full 360 degrees both horizontally and vertically makes it possible to turn these lamps in all directions.

REGISTRATION STATISTICS, AUGUST, 1931

Service, Springfield, Ill., and New Jersey, which are furnished by the New Jersey Motor List Co., New Car Division, Trenton, N. J. county, city or town lists, or lists of owners in any given section, may obtain these by addressing any of these three companies

Missouri, New Jersey, Ohio, Oregon and Virginia

States	Lincoln	Marmon	Nash	Oakland	Oldsmobile	Packard	Peerless	Pierce-Arrow	Plymouth	Pontiac	Reo	Studebaker	Stutz	Whippet	Willys	Willys-Knight	Miscellaneous	Totals
Arizona			8	1	14	2			36	5		5	1		2	1		413
Arkansas			12	4	6	1			98	26	2	9	1	1	5	1	6	1,018
Conn.	4	9	81	39	61	50		14	318	148	21	63			28	10		2,653
Delaware			7	3	10	7			36	11		3			1			409
Florida	2	7	24	5	19	10			198	70	2	18			18	2		1,783
Idaho			10	1	7				52	13		6			13	1		458
Illinois	22	16	332	52	348	143	14	22	1196	448	29	215	2		168	57	17	10,404
Indiana	4	25	65	16	125	16	1	1	652	176	5	102	2	6	131	13		4,275
Iowa	5	5	50	20	74	28			413	141	1	58		2	90	12		3,605
Maryland	3	4	56	26	36	23	7	2	255	138	7	35		3	35	11		2,847
Michigan	19	14	47	35	143	55	3	2	1371	160	19	33		1	33	11		5,219
Minnesota	5	1	53	31	104	33		3	661	131	16	71		1	91	16	1	3,580
Missouri	3	12	112	22	130	26	2	6	556	176	18	78	1	8	133	28	2	5,756
Montana			12	7	9				64	25	6	12		2	23	7		620
N. Hamp.		2	20	4	14	4		1	114	35	2	10			16	7		628
N Jersey	15	11	285	49	238	84	1	22	668	241	23	220	2		79	51	1	6,761
Nor. Car.	2	2	10	2	25	8		3	243	86	1	15		1	27	2		2,564
No. Dakota	1	1	4	3	8				29	7		6		1	7			280
Ohio	10	24	163	31	207	73	5	12	1321	270	22	148		8	160	74	1	7,271
Oregon		1	18	8	17	5		2	106	19	4	16			9	2	1	875
Penna.	25	46	377	117	335	188	3	27	2138	504	32	294	1	6	332	79	18	13,837
Rho. Isl.	1		39	11	7	7	3	8	145	58	5	34			15	9		1,269
S. Ca'lina			2	3	12	4			114	44	2	11			10	1	1	1,369
So. Dak.	1		13	2	35	5			90	24		10		1	17	1		730
Utah			8	3	2	2			8	4		6			2	1		250
Virginia	2	4	32	13	57	21		4	235	127	1	40			56	3		3,373
W. Va.	3	5	38	13	41	14		1	277	63	4	15			70	6		1,869
Wisconsin	4	3	160	25	65	28		7	486	178	11	72	1	4	67	16	2	3,306
D. of C.	1	8	46	16	72	26	1	3	183	59	5	35			14	10		1,888
Total	132	200	2084	562	2221	863	40	140	12063	3387	238	1640	11	45	1652	432	50	89,310
Ariz., '30	1	2	16	8	8	5			15	11		43	1	3	6	3		641
Ark., '30			12	6	11			4	64	18		5	1	6	2	1		1,405
Ct., 1930	3	25	106	54	59	74	3	12	93	147	37	126	1	14	19	23	6	3,498
Del., '30		2	8	9	3	14			19	24		11		1	4	1		620
Fla., '30	1	6	19	13	20	11		2	49	25	7	14		9	9	7		1,821
Idaho, '30		1	16	7	14	3			43	20	2	15		9	7	3		925
Illinois, '30	35	37	257	104	226	245	12	29	383	323	28	555	17	62	151	85	34	12,113
Ind., '30	4	41	71	42	101	43	4	6	234	124	18	184	1	51	61	13	5	4,942
Iowa, '30	1	22	84	29	81	19		1	247	144	14	90	1	57	95	18	12	5,602
Md., '30	3	11	43	32	37	18	3	3	89	91	7	70		16	21	8	7	2,897
Mich., '30	6	29	78	50	133	74	5	4	236	167	99	143		30	43	11	5	7,230
Minn., '30	3	6	65	27	68	53	2	11	235	113	9	123		56	74	41	1	4,199
Mo., '30	6	23	130	58	104	39	2	11	212	153	22	105	4	47	84	27	20	7,145
Mont., '30		4	24	15	10	2		8	42	36	9	28		12	32	10	1	1,540
N. H., '30	2	4	24	3	22	4	1	1	21	22	13	21		3	12	8	2	799
N. J., '30	17	52	278	117	195	142	16	37	175	211	48	321	4	23	68	85	14	8,418
N. C., '30	4	4	16	13	18	8		1	74	65		23		9	14	3	2	2,881
N. D., '30		3	4	3	9	1			21	10		7		6	6	4		452
Ohio, '30	16	58	253	135	230	138	36	20	498	336	60	357	2	131	216	116	17	11,418
Ore., '30	3	4	37	12	18	12		3	39	38	13	65		11	6	13	3	1,514
Pa., 1930	11	81	363	186	340	239	28	44	934	435	87	531		81	270	125	42	17,360
R. I., '30	3	3	26	19	47	12	8	4	44	75	14	47		6	18	17	2	1,385
S. C., '30		1	10	3	3	5			39	18	3	6		2	2			1,417
S. D., '30	1	4	20	12	56	2		2	58	28	4	27		13	19	4		1,297
Utah, '30		2	17	2	9	7			6	8	3	10	2	3	1			430
Va., '30	1	5	28	20	31	12	7	5	87	93	9	30		24	27	14	1	3,006
W. Va., '30	1	13	34	24	31	11	2	2	114	62	7	39		16	28	16	1	2,089
Wis., '30	2	19	145	44	87	35	5	8	176	139	10	179	1	24	72	19	6	4,199
D. of C., '30	2	5	24	24	41	25	15	1	30	53	7	59		2	10	7	22	1,913
Total, '30	126	467	2208	1071	2012	1253	149	219	4327	2989	530	3234	35	727	1377	682	203	113,156

WOLVERTON BOOSTER AIDS CARBURETION, MAKERS CLAIM

The Wolverton Power Booster is a device attached to the intake manifold above the carburetor, operating independently, but with the carburetor. It is a generator valve, or miniature carburetor, designed to increase power, pick-up and speed.

It acts all the time the engine is running, except at idling speed, when the mixture is furnished by the carburetor in the regular way. Its operation is entirely mechanical, being controlled by the accelerator. When it opens, four airports are uncovered. At low speeds one gradually opens, and at higher speeds the remaining three operate. Air only is admitted until the booster is three-fourths open, when a gasoline valve is opened by means of a can, and what is claimed to be a perfect mixture is added to the manifold through the booster. The device is fed by a ⅛-inch pipe connected to the main gasoline line.

METAL PRODUCTS OFFERS DIRECTOR SPECIAL HEATER

The latest addition to the line of heaters put out by Metal Products is the Director, a removable manifold type, described as being two heaters cast in one. The device is cast and machined to replace the regular Ford manifold. Each heater, the manufacturers state, is tested to eighty pounds of pressure before leaving the factory. In construction there are no fins inside the manifold to increase the heat, a design intended to eliminate back pressure, burned gaskets, warped valves or overheating of the engine.

TRENTON TRADE GROUP TO HEAR H. S. MOORE

Trenton, N. J., Sept. 22.—Counselor Hervey S. Moore, legal adviser of the Trenton Automobile Trade Association, will address members of that body at a luncheon meeting next Friday at the Carteret Club. He will speak on automobile legislation for 1932. This announcement was made following the luncheon meeting of the automobile dealers. The session was at the Carteret Club, and William A. Weinmann, president, presided.

Now... another great Stewart 8

BEYOND any doubt this newest Stewart "8" is the outstanding achievement of all truckdom. Unquestionably another Stewart triumph in the 8 cylinder class, this sturdy 3 tonner offers speed, power and vibrationless performance at a price that is truly phenomenal. From its rugged, heat treated 9 in. frame to its heavy duty truck motor, it's designed for long, fast, economical hauls.

Honestly rated, honestly built, the new Stewart 3 tonner is every inch a truck, capable of traveling over 50 miles an hour fully loaded. Like every Stewart, it will give many years of constant, faithful service.

If you are looking for a truck that will stay on the road and out of the repair shop, get "The World's Greatest Truck Value" on the job. Owners know Stewart performance often surpasses Stewart claims. On a cost per mile or any other test basis, this new Stewart 8 will amaze you. Free catalog sent upon request.

SPECIFICATIONS

MOTOR—8 cylinder truck type. Horse power 130.
CARBURETOR — Latest Stromberg. Swan manifold.
IGNITION — Delco-Remy — Also Delco-Remy starter.
TRANSMISSION — 4 speeds forward, 1 reverse. Auxiliary giving 12 speeds forward, 3 reverse, extra cost.
STEERING GEAR — Latest Ross roller gear type.
FRAME—Side rails, depth of 9".
SPRINGS — Front 40" x 3". Rear 56" x 3", helper springs standard.
REAR AXLE — Spiral bevel type—full floating.
BRAKES—Bendix 4 wheel with booster.
TIRES—8.25 all around. Duals rear.
WHEELBASE—170" Standard. Other lengths 150", 160", 180", 196", 226", 241".
WEIGHT—6750 lbs.

MODELS

Bevel Axle

1	ton,	4 Cylinder	$ 695
1	ton,	6 Cylinder	$ 795
1½	ton,	4 Cylinder	$ 895
1½	ton,	6 Cylinder	$ 995
1½	ton,	6 Cylinder	$1195
2	ton,	6 Cylinder	$1495
2	ton,	6 Cylinder	$1695
2½	ton,	6 Cylinder	$1990
3	ton,	6 Cylinder	$2590
3	ton,	8 Cylinder	$2990

Worm Axle

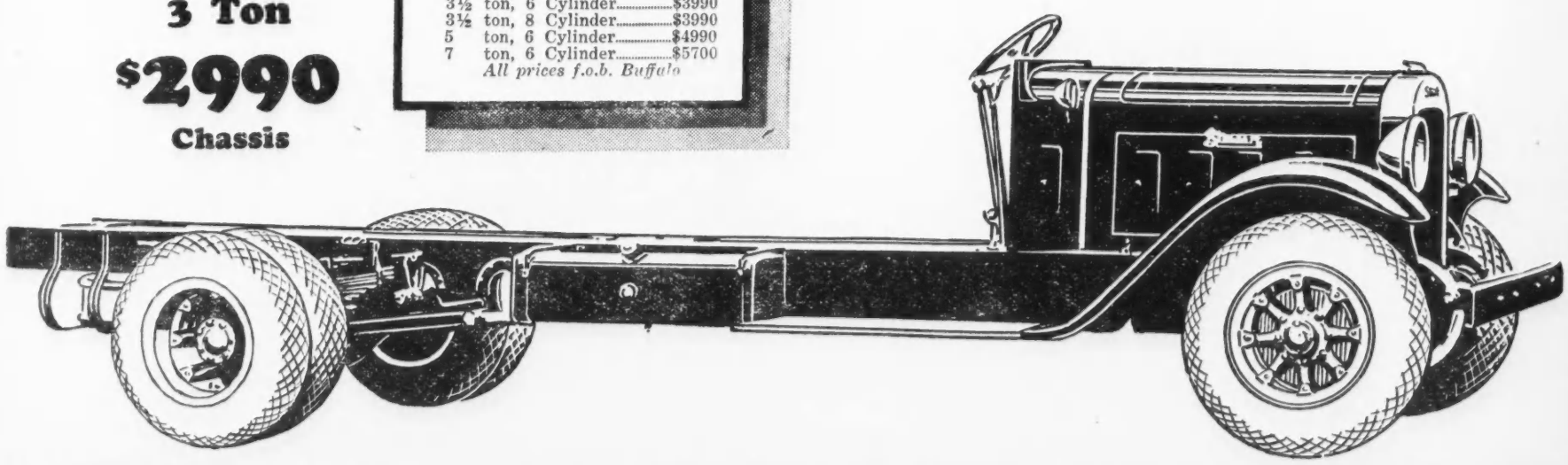
2½	ton,	6 Cylinder	$2690
3	ton,	6 Cylinder	$2990
3½	ton,	6 Cylinder	$3690
3½	ton,	6 Cylinder	$3990
3½	ton,	8 Cylinder	$3990
5	ton,	6 Cylinder	$4990
7	ton,	6 Cylinder	$5700

Double Gear Reduction Axle

2½	ton,	6 Cylinder	$2690
3	ton,	6 Cylinder	$2990
3½	ton,	6 Cylinder	$3690
3½	ton,	6 Cylinder	$3990
3½	ton,	8 Cylinder	$3990
5	ton,	6 Cylinder	$4990
7	ton,	6 Cylinder	$5700

All prices f.o.b. Buffalo

3 Ton
$2990
Chassis



Stewart MOTOR TRUCKS

STEWART MOTOR CORPORATION
BUFFALO, N. Y.

STEWART TRUCK CORPORATION OF CANADA, Limited
Fort Erie, Ont., Canada

Cables: Stewartruk-Buffalo

Codes: Acme, Bentley's (Complete Phrase) Bentley's (Second Phrase), Universal Trade Code, A.B.C. 5th Imp. (5 and 10 letter)

Stewart Trucks have won—By costing less to run